CABINET

CONFIDENTIAL 26

CAB (90) 51

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9 February 1990

PROJECT DORIS : CHATHAM ISLANDS

This paper was submitted after the deadline.

The Minister for Disarmament and Arms Control recommends that Cabinet:

a agree that the French be advised that the DORIS beacon on the Chatham Islands should be dismantled and removed;

b agree that a press statement should be made at an appropriate time confirming that the Government has completed its assessment of the DORIS project and has decided that, because of the irregular arrangements under which it came to be set up in New Zealand and because the Government has not been persuaded that its potential military applications are negligible, the beacon will not be permitted to remain on New Zealand territory;

c note that the establishment of SOEs outside Ministerial control has opened up additional possibilities for Government-owned agencies facilitating irregular activities contrary to Government policy in the areas of security and foreign affairs;

d agree that the Ministry of External Relations and Trade should convene an officials group to prepare recommendations by 1 April 1990 on formal measures to ensure some oversight and control of SOE activities with foreign policy or security implications.

Minister to report back on what if anything needs to be done to ensure [illegible] Government [illegible]

(Signed) Judith Wigglesworth
for Secretary of the Cabinet

NOTE FOR MINISTERS: The attached submission seeks a decision on the future of the DORIS beacon installed by the French in the Chatham Islands in cooperation with New Zealand Telecom. The beacon has not been operational at any time since the Government became aware of it in 1988. For the beacon to become operational the Government would have to agree to allocate radio frequencies for it. The submission sets out the history of the DORIS project and the response given by the French authorities to New Zealand's questions about it, summarises the relevant arguments, and recommends that the French agency responsible for installing the beacon be told to remove it.

OFFICE OF THE MINISTER FOR DISARMAMENT AND ARMS CONTROL

MEMORANDUM FOR CABINET

FRANCE'S PROJECT DORIS IN THE CHATHAM ISLANDS

Proposal

The purpose of this paper is to seek a Cabinet decision on the future of the DORIS beacon installed by the French in the Chatham Islands in cooperation with Telecom (formerly the New Zealand Post Office). It had been my intention to submit a proposal on the beacon's future at around this time irrespective of the public debate which has been brought about by the media coverage of the subject. As both I and the Prime Minister have noted in public statements on this issue, the beacon has not been operational at any time since the Government became aware of it in 1988. For the beacon to become operational the Government would have to agree to allocate radio frequencies for it. We have made it clear that no such steps would be taken until a decision on DORIS' future has been taken.

2 This paper traverses the history of the project; sets out the response given by the French authorities to our questions about it; summarises the relevant arguments; and finally recommends that the French agency responsible for installing the beacon be told to remove it.

Background

3 DORIS is an acronym for Doppler Orbitography and Radio Positioning Integrated by Satellite. In March 1986 the French National Geographical Institute (IGN), which devised the DORIS system in cooperation with two other French scientific agencies, wrote to the DSIR describing the project and enquiring whether a DORIS beacon might be set up in the Chatham Islands. The DSIR contacted the Post Office in Christchurch, suggesting the beacon be set up alongside existing NZPO equipment in the Chathams. NZPO Christchurch applied to POHQ in Wellington for clearance, which was granted in July 1986. NZPO Christchurch then wrote to the French offering cooperation with the project. It was not until early 1988, however, that the beacon was installed by a French engineer, by which time the New Zealand agency involved was Telecom rather than the Post Office.

4 One of 50 proposed around the world, the beacon is designed to transmit radio signals to the French SPOT-2 satellite. After many delays, this satellite has just been launched. From analysis of the Doppler shift of the received signals the French will be able to determine the spatial relationship between the beacon and the satellite with high precision. By combining this information with that from the other beacons they will be able to carry out precise mapping and geodesy over the entire globe. After 1992 the beacon could be linked to the Topex-Poseidon satellite.

5 An agreement between Telecom and the French National Geographic Institute was drawn up by the French and forwarded to Telecom Christchurch in early 1988. At about the same time the beacon was tested and was found to interfere with the New Zealand Meteorological Service's radiosonde weather-recording equipment in the Chathams. The beacon was switched off and has remained switched off since. The application to the New Zealand Radio Frequency Service for a permanent radio frequency for the beacon was put on hold, at the instigation of the Ministry of External Relations and Trade, until such time as Ministers had made a decision on the beacon's future. Now that the satellite carrying the DORIS onboard equipment has been launched, the French scientific agencies concerned will no doubt be keen to switch on the Chatham Islands beacon, along with all the other beacons in the network, as soon as possible.

Previous consideration by Government

6 The future of the DORIS beacon has been under active consideration since April 1988 when the Ministry of Foreign Affairs and the Ministry of Defence first became aware of the existence of the beacon.

7 In the following months information was gathered from overseas sources on the DORIS project. The French authorities were then asked directly to provide information about the Project. A set of technical questions was dispatched to the New Zealand Embassy in Paris in October 1988. A response was received from the French authorities in March 1989 (Annex A) and following this DESC at its meeting on 20 April 1989 agreed that steps be taken to have the beacon dismantled (DES(89)M2/4).

8 When Cabinet met on 1 May 1989, this recommendation was referred back to DESC for further consideration in light of a DSIR submission which pointed out the project's scientific and environmental benefits (CAB(89)M13/12a). Following this a new paper was prepared for DESC which recommended that the French authorities should be told either to remove the beacon or to make a proper request for its retention with full justification. Owing to the DESC workload this paper was not considered until October 1989, at which time they endorsed its recommendations (DES(89)33). In November the French Embassy provided some further explanation for the beacon's retention (Annex B). This was subsequently followed by a formal request for the beacon's retention.

9 On the basis of all the information obtained both from the French authorities and other reliable overseas sources on the DORIS beacon I believe we are now in a position to determine whether the beacon should be retained.

Civilian applications of DORIS Data

10 The results of the project would have a number of useful civilian applications. Some of these applications were described in a paper submitted by the DSIR to Ministers last year. The DSIR made an important point about the potential contribution of the DORIS project to the measurement of sea level changes brought about by global warming. There is a growing concern among the Island states of the South Pacific about the Greenhouse Effect and the future impact of rising sea levels on their territories. This concern was collectively voiced at the 1989 South Pacific Forum. As the DORIS project will make some contribution to the development of accurate geodetic systems for measuring mean sea level changes, it could be argued that our hosting of a beacon enhances efforts to improve international knowledge about this important environmental issue.

11 In addition, DORIS data will permit accurate positional measurements in geophysics and other earth sciences. France has said that it would make Doppler data recorded by the project available to the international scientific community, where it should find application in a number of disciplines, eg in geodesy, where it would enable very accurate determination of positions on the Earth; in geophysics, where it would enable precise measurements to be made of tectonic plate shifts and of gravitational variations around the globe;

and in oceanography, for measuring large-scale sea-surface effects. New Zealand scientists could gain some benefit from these types of information. The Cultural Agreement between France and New Zealand has some relevance in this context as it includes provision for scientific exchanges and these are regarded as important by the French Government.

12 It is worth recording that data from the previous French satellite (SPOT 1) was useful to New Zealand in determining the extent of damage caused by Cyclone Bola in Gisborne. This information was obtained via the Division of Information Technology in the DSIR, which has a contract with the French to purchase and distribute SPOT data and imagery in New Zealand. The DSIR purchases the data for its own purposes and also in response to client requests. It has built up a substantial archive of images of various parts of New Zealand, and has doubled its holdings over the last eighteen months. It is important to note, however, that the proposed DORIS project, with its ground beacons, is not part of the present SPOT-1 satellite programme, but will be ancillary to the work of the SPOT-2 satellite.

Military applications of DORIS data

13 Accurate geodetic information and knowledge of the gravitational and other forces acting on space vehicles are important to determine the trajectories of ballistic missiles. The French independent nuclear deterrent includes such missiles. It should also be noted that the geodetic information is relevant only over the route that the missile will travel, and that in the case of the French missiles such routes are all in the Northern Hemisphere. Officials accordingly assess that the accuracy-enhancing contribution of the DORIS beacon for French military purposes would be small. Critics of the beacon have alleged in the media that it could have a role in reconnaissance carried out by the Helios military satellite. It is possible that a link could be established between the beacon and another satellite, just as a good-quality receiver can seek and pick up random satellite transmissions, but the French have offered to fit a device to the Chatham Islands beacon designed to prevent this (see Annex B below). In any case the Helios satellite is not scheduled to be launched until 1992 at the earliest, by which time the experimental phase of the DORIS project would have ended. The use of 50 beacons around the world was intended only in the first six months of the project. Subsequently the total could be reduced to about 30 and eventually to an even smaller number.

Australian and US attitudes

14 In 1987 two beacons were installed, without Government-to-Government consultation, in Western Australia and near Canberra. When it learned of the presence of the beacons, the Australian Department of Defence objected to them on the grounds that:

(1) Australia would have not control over the data collected as a result of the operation of the beacons;

(2) the data could be used for French military purposes including the Helios reconnaissance satellite programme; and

(3) the data might be used by the USSR (as a result of the French/USSR space cooperation agreement) for mapping Australia. The USSR could also fit beacon interrogation units onto its own satellites.

15 In February 1989 the Australian Defence authorities wrote to the administering agency of the sites saying that the beacons should be removed from Australia. There was no public debate or even awareness of what had occurred. Also, in 1988 an Australian source advised our High Commission in Canberra on a confidential basis that the US authorities had blocked the stationing of DORIS beacons on Kwajalein atoll and on the US mainland, although more recent information received from the French suggests that the US has now agreed to stationing there.

Assessment of the French responses to questions concerning DORIS

16 It was the view of officials that the replies submitted by the French in March 1989 (Annex A) did not add materially to information that was already available on the subject. The key question was No 4, concerning possible military uses. The French reply did not concede that there were any military applications at all, but in fact, as noted in Paragraph 6 above, the accuracy of geodetic information is an important factor in determining the trajectory of ballistic missiles.

17 Recently the French authorities made further representations to the New Zealand Embassy in Paris, emphasising that data obtained through DORIS would only be used for peaceful purposes.

The information they conveyed directly conflicted with information on DORIS that was earlier received from reliable overseas sources. My assessment is that it will in fact be impossible to determine with any precision the purposes to which data obtained from DORIS could be put. Accordingly given that a determination of the exact nature of the military applications is virtually impossible to make, it becomes a question of judgment as to whether the scientific benefits outweigh the possibility that data from the facility would in future be used to enhance French nuclear weapons accuracy.

The EC access question

18 An added complication in resolving the issue last year was the uncertainty surrounding New Zealand's access to the European Community for butter and sheepmeat. As the French held the Presidency of the Community for the second half of 1989 and appeared reasonably well-disposed to promoting a solution of the protracted negotiations over the level of our access, it was felt that it would be advisable not to antagonise them at such a crucial stage by insisting on the removal of the DORIS beacon. The level of New Zealand's access up to 1992 was eventually agreed after arduous negotiations in which the French played a helpful role.

Implementation of the DESC Decision of 11 October 1989

19 Having taken account of the relevant arguments for and against retention of the DORIS beacon, DESC on 11 October 1989:

> "(a) noted that the DORIS project does have scientific and environmental benefits, which should be balanced against the fact that New Zealand would be hosting a facility with some potential in future to enhance French nuclear weapons targeting,
>
> (b) noted that the manner in which the French had the beacon installed without proper consultation in advance with the New Zealand Government was unacceptable,
>
> (c) noted that the French have played a helpful role in securing agreement in principle on New Zealand's sheepmeat access to the EC,

(d) agreed that the French be told formally that it was unacceptable that the beacon should have been installed without proper governmental approval. They should also be told that the matter must be put on the proper footing and a formal request for the placing of the beacon be submitted for the consideration of the Government, otherwise the beacon must be removed forthwith. Such a request, which would need to contain full justification for the project, should be submitted before the scheduled launch date of the SPOT-2 satellite, when the beacon would become operational."

20 When the message described above was conveyed to the French Embassy they responded first with an Aide Memoire setting out some information on the project and then, in a Third Person Note, with a formal request for the beacon's retention. The additional information supplied by the French is set out in Annex B.

The New Zealand response

21 The French have done what was required of them in terms of the DESC decision, and we need to inform them of our decision on their request. Having reviewed all the information on the subject I feel bound to return to my initial recommendation, which was to the effect that the beacon would be unlikely to benefit New Zealand in any substantial way and that it should be dismantled. The information provided by the French authorities on two separate occasions does not cause me to modify the view that hosting this beacon potentially involves us in helping the French to make their nuclear weapons more accurate, even if only in a very small way. If it were to remain the beacon will be a focal point for continuing controversy. There is also the important question of the irregular procedures relating to its installation. Normally any such installation would require formal Government approval. Yet the French authorities never consulted the Government formally, and I do not envisage that they will be particularly surprised by a decision to remove it.

22 This whole issue also raises in my mind some questions about the potential for SOEs to create politically difficult problems for the Government. I believe that there is a need to develop measures to ensure that SOEs are sensitive to dealings which have foreign policy implications.

Recommendations

I recommend that the Committee:

(1) Agree that the French be advised that the beacon should be dismantled and removed.

(2) Agree that a press statement should be made at an appropriate time confirming that the Government has completed its assessment of the DORIS project and has decided that because of the irregular arrangements under which it came to be set up in New Zealand and because the Government has not been persuaded that its potential military applications are negligible the beacon will not be permitted to remain on New Zealand territory;

(3) Note that the establishment of SOEs outside Ministerial control has opened up additional possibilities for Government-owned agencies facilitating irregular activities contrary to Government policy in the areas of security and foreign affairs;

reword

(4) Agree that MERT should convene an officials group to prepare recommendations by 1 April 1990 on formal measures to ensure some oversight and control of SOE activities with foreign policy or security implications.

Hon Fran Wilde
MINISTER FOR DISARMAMENT AND ARMS CONTROL

ANNEX A

(1) What type of data will be produced by the beacon and by the project as a whole?

The beacon sends out signals on 400 MHZ and 2 GHZ frequencies. A satellite in polar orbit receives the signal on a different frequency due to the Doppler effect and transmits the results to the Space Centre in Toulouse where the positions of the satellite and the emitting beacon are calculated.

(2) Will the data from the beacon and from the project as a whole be available to be shared with

(a) New Zealand;
(b) other states; and
(c) the international community? If so what form will the released data take?

The data for all the beacons installed throughout the world is necessary to calculate the orbit and the position of the station. Although the raw data will not be available, the precise position of the signals will be available to the international scientific community, unless otherwise stated by a host country.

(3) What will the data from the beacon, and from the project as a whole, contribute to or be used for?

The aim of the DORIS project is to localise the position of the ground beacons and to calculate the path of the satellite. A method of repetition allows a progressively more precise calculation of the position of the satellite and of the beacons. So as to obtain a good final precision, it is necessary to have about 50 beacons evenly distributed throughout the world.

(4) Will the data from the beacon and the project as a whole be used for civilian purposes or for military purposes or for both? If for both purposes, in what proportions?

It is a scientific project (geodesic, tectonic) which is for civilian use only.

(5) What satellites will be used to receive data from, or to interrogate, the beacon in New Zealand? Will satellites from other countries be able to receive data from, or to interrogate, the beacon in New Zealand?

The satellites which will take part in this experiment are Spot 2 in 1989 and Topex-Poseidon in 1992. If necessary, it is envisaged that the experiment will continue on Spot 3 (1992) and Spot 4 (1995). The involvement of other satellites in the experiment is not expected. The data signalled from a beacon is purely passive and can be exploited only within the worldwide network set up for the purposes of this experiment.

ANNEX B

- The DORIS system is a radio location system whose purpose is to localise as precisely as possible (to within a few centimetres) the position of beacons installed across the world. The objective of this programme is purely scientific; it will allow for more profound study in geodesy, tectonics and oceanography. No military application can be contemplated;

- the DORIS receiver will be placed on satellites with civil applications: SPOT 2 then SPOT 3 and SPOT 4 and Topex Poseidon (Franco-American oceanographic satellite);

- the localisation of the beacons cannot be carried out in real time. The DORIS system is therefore unsuitable for the calculation of missile trajectories;

- the precise position of the beacons and the scientific results obtained will be published in scientific reviews the world over.

- moreover the countries which, in spite of all this, would be afraid of a possible misuse of the DORIS network will be able to request the CNES to fit a clock on its beacon which will allow this beacon to emit only when the SPOT and Topex-Poseidon satellites are going past, thereby avoiding any possible pirating of the network by other satellites. In any case this pirating is highly unlikely, the processing of the data necessitating a substantial investment. Furthermore, pirating of a single beacon is ineffectual since it is essential to have the data from all of the beacons in order to be able to carry out accurate calculations.

CAB100

CERTIFICATE FOR SIGNATURE BY MINISTER WHEN MAKING A SUBMISSION TO CABINET OR A CABINET COMMITTEE

When completed this certificate must be attached to the submission when lodged with the Cabinet Office.

I CERTIFY that the attached submission [*delete option* **A** *or* **B**]:

EITHER

A has been referred to the relevant central advisory agencies or other departments concerned or involved because the proposal has:

OR

B has no:

Refer Direct to Cabinet on PM's recommendation

i economic, financial or revenue implications requiring a Treasury report; or

ii machinery of government or major staffing or industrial relations implications requiring a report from the State Services Commission; or

iii significant environmental implications requiring a report from the Ministry for the Environment; or

iv policy implications (including all of the above) requiring a report from the Prime Minister's Office; or

v other implications requiring a report or input from any other central advisory agency or department concerned or involved.

[*Delete if B above applies*]

Accordingly reports from _____ are attached

and/or

comments from or reference to the views of _____ are included in the submission.

7/2/90.

(Signature of Minister) (Date)

NOTE : Submissions will <u>not</u> be accepted by the Cabinet Office and will be returned to the office of the originating Minister unless the following points have been met:

i consultation with other departments concerned or involved must be adequate;

ii the submission must meet the standard of presentation and clarity required by Cabinet;

iii the CAB100 form must have an original signature by the Minister.